Advanced Design System 1.5

Release Notes

March 2001

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Chapter 1: Release Notes

Introduction

This document describes known Advanced Design System 1.5 defects and, when possible, provides workarounds. It also identifies errors and omissions in the ADS 1.5 documentation.

Design Environment

Delay When Saving Files

A delay of up to 20 seconds may occur the first time you use the *Save As* command in an ADS session. The delay occurs because the program checks for name conflicts between the design name and built-in component names. The length of the delay is based on the number of libraries installed.

Design File Corrupted on Saving

If you run out of disk space while saving a design on UNIX, the design file may get corrupted. The corrupted file may cause ADS to fail when you open the design. To avoid this problem, make sure you have enough disk space before running ADS.

Design-Related AEL Files not Automatically Updated on Saving

When you make changes to an item definition through the Design Parameters dialog box, those changes are not automatically saved on saving the design.

When you make changes in the Design Parameters dialog box, click the *Save AEL File* button before dismissing the dialog box.

Information on library_group is Lost when Design is Copied

If you copy a design for which you have defined a library (the Library Name field in *File > Design Parameters*), the library information will be lost.

The workaround is to open the copied design, choose *File > Design Parameters*, and enter the desired library name in the Library Name field. Alternatively, you can manually edit the AEL file to add the desired library name.

Invalid Design Names

Design names cannot be the same as the names of any built-in components. Because UNIX is case-sensitive, you are allowed (although we do not recommend it) to name designs after components as long as you change the capitalization. This is not allowed on the PC because the operating systems are case-insensitive.

An example worth noting is the commonly used temporary filename *Test*. This is the name of a Signal Processing component and therefore is not allowed on either platform with the capitalization shown. Using this name with different capitalization is valid on UNIX, but is invalid on the PC.

Moving Ports to Another Layer (Layout)

You cannot currently use the Move To Layer (*Edit > Move*) command to move a port to a different layer. Instead, choose *Edit > Component > Component Parameters*, select the Port, select the layer parameter, and select the desired layer from the drop-down list.

Unarchiving .zap Files on UNIX with Insufficient Disk Space

ADS may hang if you attempt to unarchive an archived (*.zap*) project on UNIX and do not have sufficient disk space. This problem has been observed on HP-UX 10.20 but may also occur on other operating systems.

Ensure that you have sufficient disk space before unarchiving a large project (a large amount of RAM is also required). If necessary, try renaming the *.zap* file with a *.z* extension and use the *unzip* utility to decompress the project file.

Agilent Ptolemy

berMC, berMC4, and ErrVecMeas Migration Problem

The components berMC, berMC4, and ErrVecMeas do not migrate properly from ADS 1.3 to 1.5. To fix this problem, read the value of the component's TimeUnit parameter in ADS 1.3 and append it to the value of the SymbolTime parameter in the ADS 1.5.

If the SymbolTime parameter is set by an expression, the expression must be enclosed in parenthese followed by the unit. For example, if SymbolTime was set to SymTime+X and the ADS 1.3 time unit was msec, then the SymbolTime should be set to (SymTime+X) msec.

The same problem exists with berMC and berMC4 the DelayBound parameter. Both of these problems will be corrected in ADS 1.5 Service Pack 1.

Problem Compiling Ptolemy Models on Windows NT from Command Line

Attempting to compile a Ptolemy model from the command line on Windows NT will result in a compilation failure. A compiler error such as "Error 128" or "cl.exe not found" is displayed even though the user path includes the path to the compiler.

The presence of several path names in the PATH environment variable can sometimes cause this problem. Try the following steps in a Command prompt window to resolve this problem:

1. Set *HPEESOF_DIR* to point to your ADS installation. For example:

   HPEESOF_DIR=d:\ads15

2. Set the *PATH* to just include *$HPEESOF_DIR\bin*, your *windows* directory, and your *windows\system* directory. For example:

   set PATH=%HPEESOF_DIR%\bin;c:\winnt;c:\winnt\system

3. Add the VC++ variables to the path using the script *vcvars32.bat*. For example:

   D:\home\hptolemy>d:\Program Files\Microsoft Visual Studio\ VC98\ Bin\vcvars32.bat

4. Follow the instructions in the Agilent Ptolemy Simulation manual, starting with the "Set Up the Area to Build Models" section on page 13-3.

Data Plotted for All Sinks

If a simulation is set up in the Simulation Setup dialog box to open the Data Display after the simulation, and the signal processing sink components use Plot parameter settings of Plot=None for some and Plot=Rectangular for others, the data will be plotted on the Data Display for all of the sinks on the schematic following simulation.

OutFile andTimeDataWrite Components Cause Simulation Failure

The OutFile component (Obsolete Sinks library) and TimedDataWrite component (Sinks library) cause the Simulator to fail after the component output files are generated at the end of a simulation. Depending on the sequential scheduling of this and other sinks used in a design, the datasets resulting from a sink might not be saved correctly. If a sink completes its data collection before this sink does, its dataset will be saved.

The workaround is to deactivate all sinks except this one in the design prior to simulation. Upon simulation, the simulator will crash and this component output dataset might not be correct, but the file generated from this component will be saved correctly.

Simulations with TimeFile and TimeDataRead Components Fail Reading Empty Files

Simulations on Windows NT/95/98/2000 platforms will fail if the TimeFile and TimeDataRead components are set to read data from a file that is empty.

SpectrumAnalyzer Sink Containing CW Tones May Not Display Properly

The spectrum may not display properly if the input to the SpectrumAnalyzer sink contains CW tones and the NumFreqs parameter is set to a non-zero value.

TimeFile and TimedDataRead Components Cannot Read Multidimensional Data

The TimeFile component (Obsolete Sinks library) or TimedDataRead component (Sinks library) cannot read multidimensional data. Attempting to do so will cause a misleading error message to be displayed.

Multidimensional data can be generated using the OutFile or TimedDataWrite components when a ParamSweep or Optimization controller is used.

The workaround is to not use multidimensional data files with the TimeFile or TimedDataRead components.

TimedSource Component Simulation Problem When Reading Complex Envelope Signal

The TimedSource component (Timed Sources library) will not simulate properly if the Expression parameter references an RF timed (complex envelope) signal by its variable or sink name used in the dataset named in the DataSet parameter.

The TimedSource component will not work with RF timed signals because it does not utilize the RF signal characterization frequency and propagates a zero value frequency instead. The component will work properly with baseband timed signals.

The workaround is to only use the TimedSource component with baseband timed signals. For complex envelope signals, use TimedToCx followed by CxToTimed, which specifies the Fc.

Using Undefined Parameter with NumericExpression or TimedExpression Component Causes Simulation Failure

The simulator will fail if an undefined variable or equation is specified for the Expression parameter in the NumericExpression component (Numeric Sources library) or TimedExpression component (Timed Sources library).

Variables and equations are specified in a VAR component. Variables may also be defined as design parameters (see the Parameters tab of the Design Parameters dialog box).

The workaround is to use only defined variables and equations.

HDL Cosimulation

Cosimulation Example Not Working Properly

The example .../*examples/sdfhdlcosim/iir_filter_prj* is missing the updated ADS 1.5 components and will not simulate properly. A replacement example project file, *hdlcosimeg.zap*, will soon be available from:

http://contact.tm.agilent.com/tmo/hpeesof/apps/ads/index.htm

Real Ports Must be Initialized for Some ModelSim Versions for VHDL Entities

In a VHDL entity, the real ports must be initialized for certain versions of ModelSim SE (such as version 5.4d) or the ModelSim will fail with an out-of-range error.

Stray Processes Must be Manually Terminated

Simulations on Windows 95/98 platforms will hang if the HdlSimulatorGUI is set to *On*. You must manually kill the *hpeesofsim.exe*, *vish.exe*, *vlm.exe*, and *vsim.exe* processes before restarting the simulation. To prevent this problem, do not open the HDL simulator GUI on these platforms.

ISS Cosimulation

Data Types Smaller Than Four Bytes Cause Error Messages

Error messages will occur if data types less than 4 bytes in size are used with the TI DSP C54x. Avoid using the data types *char*, *uchar*, *double*, *long double*, *float*, *int*, *uint*, *long*, *ulong short*, and *ushort*.

Problem If No Target DSP Specified

A target DSP should be specified in the TI CCStudio Setup tool. If this is not done, a dialog box will pop up during cosimulation and require you to select a target DSP board or simulator. You will then have to select a configuration and double-click the *TI CCStudio* icon or restart TI CCStudio.

Target DSP Limitations

The target DSP specified in the TI CCStudio Setup tool is limited to the TMS320C6x/TMS320C54x simulators. Hardware boards, such as DSK or EVM, cannot be used as the target DSP.

TI CCStudio Limited to Single Target DSP

Only one target DSP can be specified in the TI CCStudio Setup tool. If more than one is specified, the Parallel Debug Manager will open during cosimluation and the cosimulation will fail.

Translators

MDS to ADS

MDS Dataset Variable Not Translated

The MDS dataset variable is not translated to ADS. In ADS the default dataset name is the name of the design from which the simulation is started. Refer to Chapter 8, “Simulating and Viewing Results”, in the ADS User's Guide for basic information on how to set up a simulation.

MDS SDD1Pform Component Parameter Not Translated

The MDS SDD1Pform component's C[1] parameter does not translate correctly to the ADS SDD1P component. This problem can be corrected by manually editing the C[1] parameter after translation.

Some MDS Component Parameters Not Translated

The parameters for some MDS sweep specification components do not translate correctly to the ADS SweepPlan. This problem can be corrected by manually editing the SwpPlan parameters after translation.

Series IV to ADS

Component Parameter Incorrectly Translated

The *Increment* (step size) parameter of the POWER (Power plan) component is translated incorrectly. To work around this problem, manually set the desired step size after translation.

DPWRSMP Component Incorrectly Translated

In Series IV, when the DPWRSMP (dual power sampler) component was used, if nothing was connected to pin 3 or pin 4 (ignoring Test Points), then a 50-Ohm resistor was assumed to be connected to that pin. The DPWRSMP is translated as an S4P_Eqn and resistors are neither added nor assumed. This problem can be remedied by manually adding 50-Ohm resistors to pins 3 and 4 of the S4P_Eqn component.

Equations May Be Scaled Incorrectly

When your designs contain equations, the translator adds scaling factors to the numeric terms of the equation. These factors may be incorrect if the equations are complex or are ambiguous because they contain variables with different unit codes (for example, R, L) that refer to the same variable in a VAR component.

Example:

```
R = 50 + W0x     // defined in design1.dsn
W0x = W0 + 10    // defined in design2.dsn
W0 = 3.5        // defined in defaults.dsn
```

with Runit = kOhm, will be scaled as:

```
R = 50 kOhm + W0x
W0x = W0 + 10 kOhm
WO = 3.5       Note the missing scaling factor
```

To work around this problem, manually examine translated equations for correct scale factors and correct as needed.

Series IV and ADS Handle Units Differently

Units are handled very differently in ADS than they are in Series IV. If you are new to ADS, please review the discussion of units in Chapter 1 of the Series IV Design Translation manual.

SPICE

Simulator Error

The *gauss()* function in the *spiceFunctions.net* function mapping file is now a reserved word in the ADS simulator. Using the *spiceFunctions.net* function mapping file to resolve undefined functions during simulation will result in a simulator error.

This function can be disabled by preceding the *gauss()* entry in the *spiceFunctions.net* file with the comment (;) character if the function is not needed. If it is needed, the *gauss()* function should be renamed *hspice_gauss()* in the SPICE netlist prior to import or in the ADS netlist prior to simulation. It also needs to be renamed in the *spiceFunctions.net* file or directly in the ADS netlist file.

Momentum

Cannot Write Files for Computing Mesh

An error message may appear after the Momentum simulation button is pressed if multiple layout and schematic windows are open. The message says:

“The program could not write the files required for computing the mesh...It is unlikely that this error would be encountered unless the ports are not correctly defined. Confirm that the ports for your design are defined and attached to the circuit”

Clicking *OK* in the error message dialog box does not allow the simulation to continue.

To avoid this problem, close or minimize all layout and schematic windows except the layout window from which the simulation will be performed.

Layout Settings Change

Simulating a layout in Momentum RF will change the layout’s settings (units, grid, resolution, etc.) to micrometers. This occurs if a unit of measure other than micrometers was selected for the layout prior to simulation.

To restore the original layout settings, use the command *Options* > *Preferences*. Click *Read* in the Preferences for Layout dialog box. Then choose the layout preference

(*.prf*) file in the Read Preferences File dialog box. The original settings can also be restored by reloading the design.

Missing Example

The *Momentum/RF/PowerGround_prj* example was not included on the installation CD. It will be made available at a later date on the Agilent EEsof web site at:

http://www.agilent.com/find/eesof

EDGE and 3GPP W-CDMA Design Library

Design Libraries Not On CD

The EDGE and 3GPP W-CDMA Design Library products are not included on the ADS 1.5 CD set. Authorized customers will be able to download them from the Agilent EEsof web site by March 1, 2001.

To download these ADS 1.5 products, do the following:

1. Go to the Agilent EEsof EDA Support Web Login Page at *http://edasupportweb.agilent.com*
2. Enter your CPU ID or System Handle, then click the login button.
3. Select the Add-on Software Download Area.
4. The Agilent EEsof EDA Advanced Design System 1.5 Software Download Page is displayed.
5. Select the EDGE or 3GPP W-CDMA design library. Follow the installation notes to install the EDGE or 3GPP software onto your existing copy of ADS 1.5.

CDMA

IS95_Measure_prj Generates Incorrect EVM Value

In the *IS95_Measure_prj* example, the SymbolTime parameter of model ErrVecMeas (which is now in Obsolete Sinks) is a number without a time unit. This results in an incorrect EVM value. To avoid this problem, manually add the msec time unit to this parameter.

IS95A_ChnCodec_prj Number of Frames Tested Too Small

In the example *IS95A_ChnCodec_prj*, the number of frames tested in the designs is too small to produce an accurate BER/FER for a high SNR. Use a larger number to obtain good BER curves.

CDMA 2000

CDMA2K_CRC_Coder and CDMA2K_CRC_DeCoder Models Enumerated Values Incorrect

In the CDMA2K_CRC_Coder and CDMA2K_CRC_DeCoder models, the enumerated values CRC6 0X5 and CRC6 0X47 for the CRCType parameter are incorrect. You can set the Mode Select parameter option to “User defined” and set the values for the Polynomial parameter to the desired CRC generator polynomial (i.e., 0X5 or 0X49). This problem will be corrected in 1.5.2 release.

CDMA2K_Measurement_prj Generates Incorrect EVM Value

In the *CDMA2K_Measurement_prj* example, the SymbolTime parameter of model ErrVecMeas (which is now in Obsolete Sinks) is a number without a time unit. This results in an incorrect EVM value. To avoid this problem, manually add the msec time unit to this parameter.

CDMA2K_RC_TD_prj Examples Inconsistent with CDMA 2000 Standard

For some examples for forward link in project *CDMA2K_RC_TD_prj*, the scrambling mode by long PN code and the data mapping for OTD mode are not consistent with the CDMA 2000 standard. The user can still use these examples as references because this inconsistency has little influence on system performance. This will be revised in 1.5.2.

W-CDMA

PerchCH_prj Data Slot Settings

In the *PerchCH_prj* example, the *.dsn* file has a setting for 1000 slots of data, but the associated dataset (.dds) file was obtained using a setting of 100 slots. Using larger slot numbers provides more accurate results, but lead to significantly longer simulation times.

Data Display

ADS 1.1 Data Display Files

Opening an ADS 1.1 Data Display file that contains a Smith Chart with a marker will cause the Data Display to fail.

To work around this problem, open the Data Display file in ADS 1.3, save it, and open it in ADS 1.5. You can also open the file in ADS 1.1, delete the marker, save the file, open it in ADS 1.5, and replace the marker.

Corrupted Data Display Files

A Data Display cannot be saved following the placement of a marker on a trace that references string data as the independent variable. Doing so will create a corrupted Data Display file that cannot be opened. This problem will be corrected in the ADS 1.5 service pack.

Documentation

Online Access

Circuit Components

Help Unavailable for Circuit Components

Selecting help for the AmpH1_H2, AmplifierP2D, AmplifierS2D, AmpLoadPull, LoadPullSetup, and RF_PA_CKT circuit components fails to open the relevant help topic.

This data can be accessed by selecting *Help* > *Topics and Index* > *Manuals* > *Components* > *Circuit Components* followed by the additional choices described below.

For the system data model components, select *System Models* > *AmpH1_H2*, *AmplifierP2D*, *AmplifierS2D*, *AmpLoadPull*, or *LoadPullSetup*.

To access RF_PA_CKT component data, select *System Models* > *Tx/Rx Systems* > *RF_PA_CKT*.

Data Display

Help Unavailable for Data Display Preferences Dialog Box

Online help is unavailable in the Data Display for the Preferences dialog box. Clicking the *Help* button on this dialog box will (except for the Marker tab) fail to open the relevant help topic. Refer to the online or hardcopy version of the Data Display manual for information on setting Data Display preferences.

Digital Filter Designer

Help Unavailable for Import Ideal AEL Coefficients Function Dialog Box

Online help is unavailable for the Import Ideal AEL Coefficients Function dialog box in the Digital Filter Designer. Clicking the *Help* button on this dialog box will cause error messages to be displayed and the help topic will not open. Refer to the online or hardcopy version of the Digital Filter Designer manual for information on importing ideal AEL coefficients.

E-Syn

Options Dialog Box Help Opens Wrong Topic

The online help for the Program, Units, Synthesis, Analysis, and Optimization Options dialog boxes in E-Syn open the wrong help topic. Clicking the *Help* button on any of these dialog boxes opens the “Options Menu” topic instead of the appropriate topic for the dialog box. Refer to the online or hardcopy version of the E-Syn manual for information regarding these dialog boxes.

MDS to ADS

Link to Importing Designs Topic Broken

The link from the MDS translation help topic “Creating Customized Rules Files” to “Importing Designs” topic is inoperative. Clicking on this link displays an error message that states that the file or directory cannot be found.

Refer to Chapter 2, *Importing and Simulating*, of the MDS Translation manual for information on importing designs.

MDS to ADS Import Dialog Box Help

The online help for the MDS to ADS Import dialog box opens the wrong help topic. Clicking the *Help* button opens “Translating Designs into ADS” instead of “Exporting Designs from MDS”. The latter topic instructs you to use the *migrate.ddl* script

instead of the IFF export feature. Failure to do so will result in an unsuccessful design export.

When exporting a design from MDS, follow the instructions beginning with the “Exporting Designs from MDS” section and continue until you reach the end of “Translating Designs into ADS”.

Passive Circuits Design Guide

Help Buttons on Automated Assistants Inoperative

The help buttons on the four Automated Assistants do not work. To access documentation for these assistants from within ADS, select *Help > Topics and Index > DesignGuides > Passive Circuits*. Then open the chapter for the Automated Assistant of interest.

Search

Search Engine Query Entries

The online help system’s search feature has difficulties performing queries on some types of entries.

The search engine may not return any matches if the query entry contains underscores. If this occurs, perform a query using a root term from the original entry. For example, use “import” rather than “de_import_design”. You may need to scroll through the list of matches to find the most appropriate topic.

Using a partial word for a query entry could prevent the search engine from finding any matches. For example, when you perform a query, use a complete term such as “hpeesofsim” because no matches will be found for “eesofsim”.

Customized ADS Installations

The search engine may not return matches for a query if you have a customized ADS installation. Even if match appears, clicking on it may not display a help topic, resulting in a navigation error. Whether or not this problem will occur depends on how the custom installation was performed and which documentation files were omitted.

Signal Processing Components

Link to Signal Processing Components Documents Broken

The link from the master list of PDF files (*pdf.html*) page to the Signal Processing Components PDF document is broken. Clicking on this hyperlink brings up a Netscape error message because the destination PDF file no longer exists.

All signal processing components were originally described in a single, large PDF file. Size constraints resulted in this file to being broken down into multiple files with one signal processing component library per file.

To access a signal processing component library PDF file, go to the manuals page and select *Components*. Then select *Signal Processing Components* on the Component Documentation page. Click on the desired component library on the Signal Processing Components page.

Simulation

Help Unavailable after Simulation with Component from Interactive Controls and Displays Library

Online help (the ADS documentation server) is unavailable on Windows NT/95/98/2000 platforms after running a simulation that uses any of the components from the Interactive Controls and Display library. To enable the help server, you must use the Windows Task Manager to explicitly kill the *hpeesofsim.exe* process.

Vendor Library Components

Help Must be Accessed from Component Library Window

Help for Vendor Library components is only available from the Component Library window. To display the documentation for a component, do the following:

1. Choose **Insert > Component > Library** (or click the Display Component Library List button) from a Design window.
2. Choose the component from the displayed list.
3. Choose **Help > Component Help**.

Manuals

User's Guide

Undocumented Keyboard-Related Enhancements

- You can now use the Page Up/Down and arrow keys to scroll the contents of the active design window
- Moving a selected group of items no longer requires pressing the Shift key
- You can now use the Escape key to stop the current command (*End Command*)

Customization

Variable Not Documented

The variable shown below is not documented in the ADS 1.5 Customization manual.

Variable, description, and example	Value
OPEN_DDS_AFTER_SIM Establishes a default state for whether or not to automatically open a Data Display window upon completion of a simulation. This setting can be overridden for any given simulation using the Simulation Setup dialog box. Note: If this variable is not defined, or is defined but set to something other than TRUE or FALSE, the initial state for Analog/RF designs is TRUE and for DSP designs is FALSE. Example: OPEN_DDS_AFTER_SIM=TRUE	TRUE or FALSE

Circuit Components

Corrections for BSIM3_Model Parameters

Several BSIM3_Model parameters are incorrectly capitalized. The correct capitalization for these parameters is *Toxm*, *Vfb*, *Noff*, *Voffvc*, *Ijth*, *Alpha1*, *Acde*, *Moin*, *Tpb*, *Tpbsw*, *Tpbswg*, *Tcj*, *Tcjsw*, and *Tcjswg*.

The documentation also incorrectly identifies the parameter for the coefficient of Webb's body dependence as *Dwb*. The correct spelling is *Dwbg*.

Hu, WALL1, and WALL2 Microstrip Parameters

The documentation's description of how the *Hu*, *Wall1*, and *Wall2* microstrip parameters are used is unclear. If the microstrip substrate definition has a cover height (*Hu*) of less than 100*H, the impedance calculation takes the wall (*WALL1* and *WALL2*) and cover (*Hu*) effects into account. *Wall1* and *Wall2* should be set to appropriate values.

InitCond Component Parameter

The documentation's description of how the *InitCond* parameter is used with lumped components needs clarification. When *InitCond* is specified, the "Use user-specified initial conditions" check box in the Convergence tab of the Simulation Transient control item must be enabled for this condition to take effect.

IQ_ModTuned Modulator Component

The documentation does not clearly state that the IQ_ModTuned modulator component can generate both amplitude and phase modulation (AM and PM).

Missing Parameter Data for Waveguide Components

The parameter definition data for several waveguide components is missing from the documentation. The missing parameter data is listed below.

CPW:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductor and ground plane, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWGAP:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductor and ground plane, in specified units

S = gap between end of center conductor and ground plane, in specified units

Temp = physical temperatures in degrees C

CPWCPL2:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductors and ground plane, in specified units

S = gap between end of center conductor and ground plane, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWCPL4:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductors and ground plane, in specified units

S = gap between outer and inner center conductors, in specified units

Wi = width of inner center conductor, in specified units

Si = gap between inner center conductors, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWEF:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductor and ground plane, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWEGAP:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between end of center conductor and ground plane, in specified units

S = gap between end of center conductor and ground plane, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWG, CPWOC, and CPWSC:

Subst = substrate instance name

W = center conductor width in specified units

G = gap (spacing) between center conductor and ground plane, in specified units

L = center conductor length, in specified units

Temp = physical temperatures in degrees C

CPWSUB:

H = substrate thickness in specified units

Er = relative dielectric constant

Mur = relative permeability

Cond = conductor conductivity

Hu = cover height, in specified units

T = conductor thickness, in specified units

TanD = dielectric loss tangent

Rough = conductor surface roughness, in specified units

Cond1 = (for Layout option) layer to which Cond is mapped; default = cond

RWG, RWGINDF, and RWGT:

A = inside width of enclosure in specified units

B = inside height of enclosure in specified units

L = waveguide length, in specified units

Er = relative dielectric constant

Rho = metal resistivity (relative to copper)

TanD = dielectric loss tangent

Mur = relative permeability

TanM = permeability

Sigma = dielectric conductivity

Temp = physical temperature in degrees C

SaveCurrent Parameter Not Documented

The *SaveCurrent* parameter, which is available with the Sort and I_Probe components, is not documented in the online manual. To save the branch current, set this parameter to *yes*. The default is *no*.

V_HB_Dataset Not Documented

The dialog box help for the V_HB_Dataset component (voltage source using HB dataset variable) does not work and there is no documentation available in the online manual. The following is some basic parameter information on this component, which is accessed from the Sources - Freq Domain component library:

Dataset = dataset name (or specify file-based)

Variable = dataset variable

Vdc = DC voltage (default = 0)

Vac -polar (1,0)V = AC voltage; use polar() for phase

SaveCurrent = set to *yes* to save current (default), or *no*

Layout

Instructions for Setting Layout Resolution Incorrect

The instructions for setting layout resolution on page 2-36 of the Layout manual contain extraneous text which is incorrect. The instructions should read:

Set the correct resolution (the smallest number allowed in layout), at the *beginning* of a design.

1. Choose the menu command *Options >Preferences*.
2. In the dialog box that appears, select the *Layout Units* tab.
3. Enter the resolution.
4. Click *Apply*. The resolution changes for the *current* design.

The smaller the number the more precise the data base, but because Layout uses a 32-bit integer data base, setting a very small resolution limits the largest user

number that can be represented. This is usually not a problem for most designs until the resolution is greater than 0.0001.

The greater the resolution, the more difficult it is to ensure exact alignment of vertices in layout. Conversely, the greater the resolution, the smaller the *gaps* from round-off errors produced by non-orthogonal angles.

It is important to consider using a consistent resolution when creating related designs, or when using the packaged parts library. Information can be lost when going from a higher resolution to a lower resolution, and, a design with a resolution setting of 1000 placed inside a design with resolution setting of 100 will appear 10 times too large. The packaged parts library was created using the default resolution setting (100).

Angles are stored in the data base as integers, but they have a hard-coded resolution of 1000 data base units per degree. All angles are stored in degrees between –180 and 180 degrees. Angles specified with more than three decimal places are rounded off (24.7895 is stored as 24.790).

Agilent Ptolemy

make-def Variable Not Documented

The online help topic and Agilent Ptolemy Simulation manual section titled “The src Directory and make-defs in more Detail” are missing information on a new make-def variable.

The Dependencies table should include the following new entry:

Directory	make-defs Variable
instruments/stars	SDFINSTKERNEL

When this make-defs variable is set in the make-defs file (SDFINSTKERNEL = 1), it will include the *SDFInstrument.h* header file with the other dependencies at compilation.

Series IV Design Translation

Translating Individual Hierarchical Designs

In the “Importing Designs” section of Chapter 2, Importing and Simulating, the following *incorrect* statement appears:

- When translating designs individually, no hierarchical information is preserved. If your design is hierarchical, you should import the entire project.

Correction: If you select an individual design to translate, and that design is hierarchical, the subnetwork designs are also translated. Note that if you translate once, go back to Series IV and make any changes to either the top-level or subnetwork designs and translate again (into the same destination project), only the top-level (or specified) design is retranslated.

Momentum Manual

Perturbed Design Optimization Failure

The Momentum user manual does not mention that optimization may fail to create the working designs after you rotate some objects or components to obtain your perturbed design.

This optimization problem is caused by resolution problems in the drawing environment. If you zoom in to the resolution level, you will see a loss or creation of connectivity, which causes the creation of the working design to fail. To avoid this problem, flatten all components and merge all geometries before you create a perturbed design.

Reducing Momentum Memory Consumption

The Momentum manual does not describe how to reduce Momentum memory consumption during simulation.

In Momentum, the storage of quadruple integrals (QI) for close coupling interactions enables you to reuse them from one frequency to another. Switching this database off allows Momentum to handle larger structures, in terms of MB needed, at the cost of an increased simulation time. However, if memory swapping is avoided by doing this, simulations can even be faster. The gain in terms of MB depends on the amount of close coupling interactions in the circuit.

The QI database is on by default. To switch it off, you must create or edit the Momentum configuration file *(\$HOME)/hpeesof/config/momentum.cfg* and add the line:

```
MOM3D_USE_QI_DATABASE = FALSE
```

Removing this line, or setting the value to `TRUE`, restores the default condition.

Visualizing Surface Currents of Existing Projects

The Momentum user guide does not describe how to visualize the surface currents of existing projects with Momentum Visualization.

The surface currents of projects solved with Momentum under ADS 1.0 or ADS 1.1 can be visualized using Momentum Visualization. The surface currents shown are the superposition of weighted port solutions. The definition of a port solution was altered in ADS 1.3/1.5. In ADS 1.1 and earlier, a port solution was defined as follows:

A voltage source is attached to the port under consideration and all other ports are left open. Consequently, displaying individual port solutions will show standing wave patterns. For the port solution definition in ADS 1.3/1.5, refer to the chapter, *Displaying Surface Currents*, in the Momentum manual. Port solutions from ADS 1.1 and earlier can be transferred to the ADS 1.3 definition.

Contact Agilent technical support if you have trouble transferring port solutions.

Visualizing Surface Currents Using Discrete Arrow Plots

The Momentum user manual does not mention that arrow plots enable you to visualize the surface currents using a vector representation.

On a dense, uniform grid, a vector represents the sampled surface current. Normally, the grid density should be appropriate. If not, the discrete arrow plot provides another way to look at the surface currents. In a method of moments solution, your circuit is subdivided into a number of cells.

The surface current on each cell is expanded in a set of basis functions (Momentum uses rooftop basis functions). On a cell, there is a basis function associated with each edge. The total current on a cell is the linear superposition of all basis functions with their appropriate amplitude. In the discrete arrow plot, a vector is shown in the middle of all cell edges representing the basis function amplitude.

Expressions, Measurements, and Simulation Data Processing

Documentation Refers to Nonexistent Examples

The “Measurements and Expressions” section of the “Expressions, Measurements, and Simulation Data Processing” manual contains a reference to the *simple_meas_1.dds* file. This file was removed from the */examples/Tutorial/expres_meas_prj* directory for ADS 1.5.

Design Guides

PLL DesignGuide Parameter Definition Incomplete

The description of the *Id* parameter in the Parameter Definitions section of the PLL DesignGuide is incomplete. The description should read:

[Id] *Charge Coupled Phase Detector*: Maximum output current for the charge pump detector. This parameter sets the sensitivity of the detector by Kd=Id/(2*pi).

Miscellaneous

Color Images Printed in Black and White

Xprinter cannot print color graphics saved as EPS, PCL4, or PCL5 files. Try printing directly to the LaserJet 5M printer or assign the 5M to FILE instead of printer.

Hardcopy and Screen Colors Differ

The HP Color LaserJet printer has problems printing color hardcopy from UNIX installations using Xprinter if the PCL Cartridge driver is selected. The colors in the hardcopy produced using this driver do not match those displayed on the monitor.

Use the Color LaserJet PS driver when generating color hardcopy or print in monochrome.

HPGL/2 Output and TrueType Fonts

If your design contains any TrueType fonts and you print to file using the HPGL/2 format, your text will be lost. To preserve it, convert it to HersheyRomanNarrow as follows:

- Component Text—Choose *Select* > *Select All*. Choose *Edit* > *Component* > *Component Text Attributes*. Select *HersheyRomanNarrow* from the Font type drop-down list and click *OK*.
- Other Text—Choose *Select* > *Select All*. Choose *Edit* > *Edit Text*. Select *HersheyRomanNarrow* from the Font Type drop-down list and click *OK*.

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